

Safe and efficient operations of nuclear power plants and the importance of valve and motor diagnostics are interrelated. Consequently, today's utilities are deploying state-of-the-art, high-performance solutions to monitor, trend and predict performance of these safety-related components to mitigate the risk of failure. For over 150 years, CRANE Co. has been a leader in providing fluid-handling solutions. From becoming the first company granted authority to manufacture nuclear-grade valves in the early 1970s to developing the industry's first portable motor-operated valve diagnostic system in the mid 1980s, CRANE Co. (specifically CRANE Nuclear) continues to deliver high tech, innovative solutions to the industry. Our new **Gabriel™** *Valve Performance Monitoring System* embraces the evolution of cutting-edge technologies to provide the industry with a valve and motor condition monitoring solution that advocates a *Safety Every Step of the Way* philosophy.

Satisfy Regulatory-Driven Testing Requirements

The nuclear power industry has experienced decades of safe, efficient operations largely due to the creation of sound preventive maintenance practices. Historically, utilities developed their preventive maintenance programs to either address USNRC regulation or optimize maintenance activities. Program owners enhanced their processes as technology evolved to include the use of portable data acquisition systems for periodic verification testing.

Gabriel™ Valve Performance Monitoring System replaces traditional, resource-draining methods associated with the use of portable diagnostic equipment. The technology is designed to continuously monitor a plant's safety-related valves and motors and record the performance of the component *during operation*. Gabriel™ eliminates the need for regulatory-driven, periodic verification testing during refuel outages and represents an estimated \$600,000 in annual O&M cost savings.¹

**Gabriel™**

Valve Performance Monitoring System

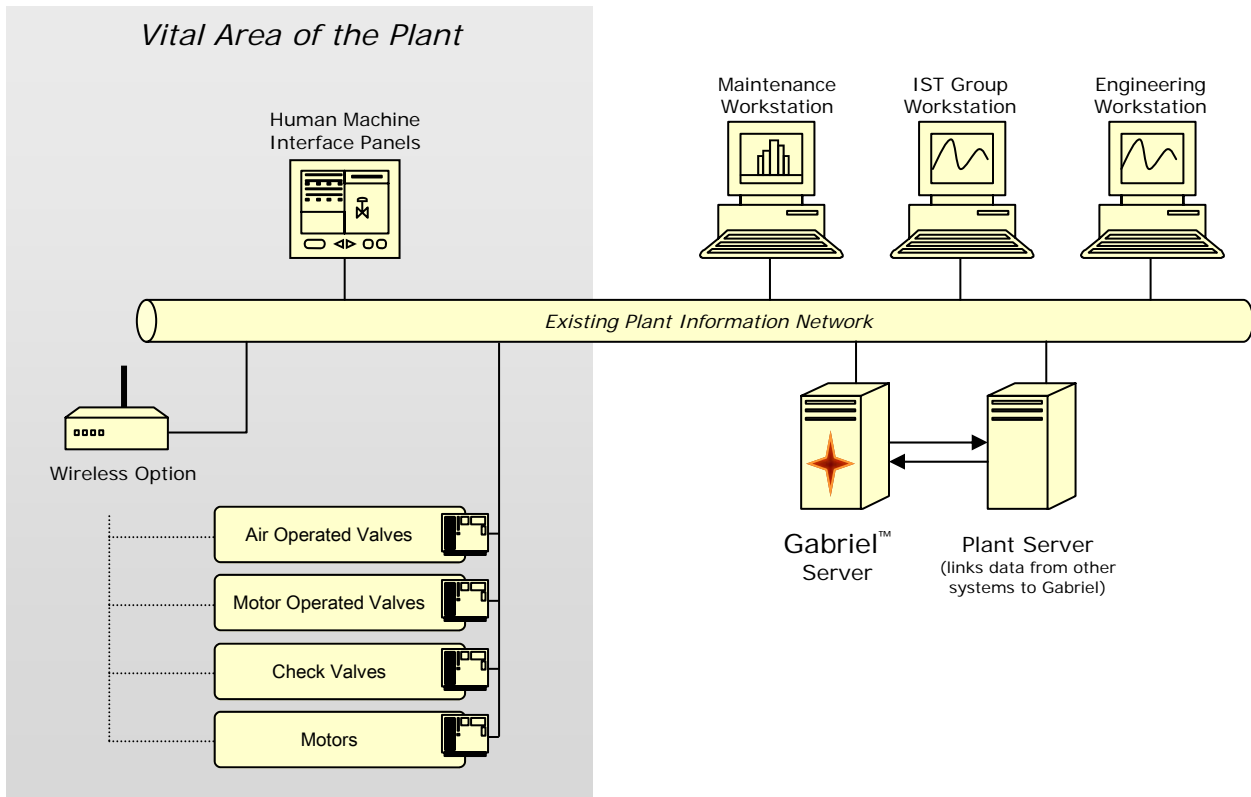


Operational Benefits

- ◆ *Eliminates the need for periodic verification testing at the valve with portable equipment*
- ◆ Satisfies USNRC requirements for testing motor-operated valves (Generic Letter 89-10 and 96-05)
- ◆ Continuously monitors and tracks valve and motor status
- ◆ Automatically analyzes valve and motor performance
- ◆ Integrates with existing plant information network
- ◆ Reduces radiation exposure by reducing the number of maintenance tasks in harsh environments
- ◆ Provides a record of every event and action taken by the monitored component
- ◆ Allows controlled access to test data from any location with access to the server
- ◆ Tracks and updates scheduled test due dates and test frequency automatically

1. Cost savings based on historical average spend for valve testing at a two-unit site with 1000 MW reactors and 24-month refuel cycle.

Gabriel™ System Diagram



Maximize Performance With Patented Technologies by CRANE Nuclear

CRANE Nuclear delivers a total package of innovative products and services to satisfy multiple plant diagnostic issues. Our Gabriel™ Valve Performance Monitoring System delivers one solution comprised of a number of patented technologies to provide the industry with another high tech approach to maximizing plant performance.

To find out more, contact Tony Morris, Marketing Manger at 770.429.4706.

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N-TP-VPMS-0307